

Application No.: 09/826,712  
Amendment dated: January 13, 2004  
Reply to Office Action of December 31, 2003

This listing of claims will replace all prior versions and listings of claims in this application:

a.) Listing of Claims

1. (Currently amended) A double confocal scanning microscope for examining a specimen, the microscope comprising:

at least one light source defining an illuminating beam path and emitting coherent light of various wavelengths;

at least one detector defining detection beam path; and

two corrected microscope objectives defining an optical axis, a beam splitter, and a lens arranged in the illuminating beam path and the detection beam path,

wherein the two corrected microscope objectives have optical properties and are arranged opposite of each other relative to a specimen, so that the longitudinal chromatic aberrations of the two corrected microscope objectives with respect to the optical axis are almost identical for the two microscope objectives, and wherein a resolution of the microscope is at least the order of magnitude of a theoretically achievable resolution of the microscope.

2.(Currently amended) The scanning microscope as defined in Claim 1, wherein the longitudinal chromatic aberrations of the two corrected microscope objectives are reduced with regard to a second plane being at least partially coincident with a focal plane of the two microscope objectives for light of a second wavelength.

3. (Currently amended) The scanning microscope as defined in Claim 2 4, wherein the second plane is symmetrically disposed between a first and a third planes, wherein the first plane is a focal plane of light of a first wavelength and wherein the third plane is a focal plane of light of a third wavelength.

4. (Currently amended) The scanning microscope as defined in Claim 1, characterized in that a the beam splitter of an interferometer is provided in the

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illuminating beam path and the detection beam path, thereby defining a first and a second individual partial beam paths ~~wherein~~ along which the accumulated aberrations ~~of the~~ of the interferometer are made opposite to one another.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Currently amended) The scanning microscope as defined in Claim 3 ~~4~~, wherein reduction of the chromatic aberrations occurs for the light of the first, second and third wavelengths selected from a wavelength range from about 200 nm to about 2000 nm.

9. (Currently amended) The scanning microscope as defined in Claim 3 ~~4~~, wherein polarization properties of the two microscope objectives disposed along ~~an~~ the optical axis, a the beam splitter, and a the lens are coordinated with one another in such a way that the light of the first, second and third wavelengths is focused on the first, second and third plane accordingly.

10. (Previously amended) The scanning microscope as defined in Claim 1, further comprising a detection pinhole and a dichroic beam splitter detecting the illumination beam path, wherein a position of at least the dichroic beam splitter or a position of at least the detection pinhole can be altered.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

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16. (Previously amended) The scanning microscope as defined in Claim 10, wherein the detection pinhole is embodied as at least one chromatically selective component.

17. (Previously amended) The scanning microscope as defined in Claim 16, wherein at least one chromatically selective component is provided for each detected wavelength region.

18. (Previously amended) The scanning microscope as defined in Claim 16, further comprising a multi-band detector disposed after the chromatically selective component.

19. (Currently amended) The scanning microscope of Claim 3, wherein the first wavelength is about 488 nm, the second wavelength is about 567 nm, and the third wavelength is about 647 nm.

20. (Previously added) The scanning microscope of Claim 1, wherein the theoretically achievable resolution capability of the microscope is about 100 nm.